

WHAT IS CLAIMED IS:

1. A calorimeter, having an absorbent, for converting energy of radioactive rays into heat, and a resistor, for converting heat into an electrical signal using a superconductive transition, arranged on a membrane for determining thermal conductivity, and having the membrane attached to a substrate, wherein the substrate has a tri-layer structure comprising an etching layer, an etching stop layer and a support substrate, and the membrane is arranged separated by the thickness of the etching layer and the etching stop layer.

2. A calorimeter, having an absorbent, for converting energy of radioactive rays into heat, and a resistor, for converting heat into an electrical signal using superconductive transition, arranged on a membrane for determining thermal conductivity, and having the membrane attached to a substrate, the substrate having a tri-layer structure of an etching layer, an etching stop layer and a support substrate, wherein the membrane is arranged in a specified direction and the etching layer is etched from the etching layer side.

3. The method of manufacturing a calorimeter as disclosed in claim 2, wherein the etching layer is formed from silicon with a planar orientation of (100), with a membrane orientation being $\langle 100 \rangle$.

4. A method for manufacturing a calorimeter, having an absorbent, for converting energy of radioactive rays into

heat, and a resistor, for converting heat into an electrical signal using superconductive transition, arranged on a membrane for determining thermal conductivity, and having the membrane attached to a substrate, the substrate having a tri-layer structure of an etching layer, an etching stop layer and a support substrate, comprising the steps of:

providing a hollow at part of the etching layer; depositing a sacrificial layer; flattening a surface of the etching layer; and etching the etching layer from the etching layer side.